

Choosing a visualization option with **Giovanni-4**

The following slides demonstrate how to select a visualization option with the Giovanni-4 interface

How a visualization was selected with Giovanni-3

In Giovanni-3, the last step before creating a visualization is selecting the type of visualization. The drop-down menu (arrow) is displayed when the visualization window is clicked. After selection, the name of the visualization will appear in the window.

The screenshot displays the Giovanni-3 web interface. At the top, there's a map of Antarctica with coordinates: Area of Interest: West: -180, North: 90, South: -90, East: 180. Below this, a section titled 'Select Levels for (3D) Parameters' provides instructions for selecting levels for vertical and horizontal plots. It includes dropdown menus for 'Upper Level' and 'Lower Level'. A note states: 'NOTE: Humidity profiles, H2O* and relative humidity* (3D), are LAYER variables; they represent the mean value of the corresponding entity in the layer enclosed within indicated levels; e.g. a humidity entity selected at 500 mb represents the mean quantity in the layer 500-400 mb.'

The 'Parameters' section shows a table of parameters and their data product info. The parameters listed are:

Parameter	Data Product Info
<input type="checkbox"/> CH4 degree of freedom_descending (CH4_dof_D)	Aqua - AIRS standard
<input type="checkbox"/> CH4 degree of freedom_ascending (CH4_dof_A)	Aqua - AIRS standard
<input type="checkbox"/> CH4 volume mixing ratio_ascending (CH4_VMR_eff_A) (3D)	Aqua - AIRS standard
<input type="checkbox"/> CH4 volume mixing ratio_descending (CH4_VMR_eff_D) (3D)	Aqua - AIRS standard
<input type="checkbox"/> CO degree of freedom_ascending (CO_dof_A)	Aqua - AIRS standard

The 'Temporal' section shows date selection: Begin Date (Year: 2013, Month: Feb, Day: 28) and End Date (Year: 2013, Month: Feb, Day: 28). A red circle highlights the 'Select Visualization:' dropdown menu. A large white arrow points to the dropdown menu, with the text 'Drop-down menu of visualization options' next to it. The dropdown menu is open, showing a list of visualization options: Lat-Lon map, Time-averaged; Lat-Lon map of time-averaged differences; Vertical Profile; Time series, Area-averaged differences; Time series; Scatter plot, Time-averaged; Latitude-Time Hovmoller Diagram; Longitude-Time Hovmoller Diagram; Cross Map, Time-Pressure; Cross Map, Latitude-Pressure; Scatter plot; Correlation map; Cross Map, Longitude-Pressure; Animation; and Lat-Lon map, Time-averaged.

How a visualization is selected with **Giovanni-4**

In Giovanni-4, the customary **first** step is to select the visualization type. The visualizations are classified by type, as there are more options in G4 than G3.

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Select Plot
Choose a plot type.

☒ **Maps: Time-Averaged** ☐ Comparisons: Select... ☐ Time Series: Select... ☐ Vertical: Select... ☐ Miscellaneous: Select...

Select Date Range (UTC)
Format: YYYY-MM-DD. - 00 hrs to - 23 hrs
Valid Range: 1979-01-01 to 2014-11-21

Select Region (Bounding Box)
Format: West, South, East, North -180, -90, 180, 90

Select Variables

▼ Disciplines

- ☐ Aerosols (118)
- ☐ Atmospheric Chemistry (12)
- ☐ Atmospheric Dynamics (62)
- ☐ Hydrology (16)
- ☐ Water and Energy Cycle (26)

▼ Measurements

- ☐ Aerosol Index (1)
- ☐ Air Pressure (4)
- ☐ Air Temperature (14)
- ☐ Albedo (5)
- ☐ Altitude (4)
- ☐ Angstrom Exponent (16)
- ☐ Atmospheric Moisture (20)
- ☐ CH4 (4)
- ☐ CO (4)
- ☐ Cloud Fraction (4)
- ☐ Cloud Properties (9)

Number of matching Variables: 0 of 219 Total Variable(s) included in Plot: 0

Keyword:

Visualization selection in G4: Comparison Options

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Select Plot
Choose a plot type.

☒ **Maps: Time-Averaged** ☐ Comparisons: Select... ☐ Time Series: Select... ☐ Vertical: Select... ☐ Miscellaneous: Select...

Select Date Range (UTC)
Format: YYYY-MM-DD.
- - 00 hrs
Valid Range: 1979-01-01 to 2014-12-31

Select Variables

▼ **Disciplines**

- ☐ Aerosols (118)
- ☐ Atmospheric Chemistry (12)
- ☐ Atmospheric Dynamics (62)
- ☐ Hydrology (16)
- ☐ Water and Energy Cycle (26)

▼ **Measurements**

- ☐ Aerosol Index (1)
- ☐ Air Pressure (4)
- ☐ Air Temperature (14)
- ☐ Albedo (5)
- ☐ Altitude (4)
- ☐ Angstrom Exponent (16)
- ☐ Atmospheric Moisture (20)
- ☐ CH4 (4)
- ☐ CO (4)
- ☐ Cloud Fraction (4)
- ☐ Cloud Properties (9)

Comparisons Choices

- ☒ **Map, Correlation**
Simple linear regression of 2 variables at each grid cell
[Details...](#)
- ☐ **Scatter (Static)**
X-Y plot of 2 variables
[Details...](#)
- ☐ **Scatter (Interactive)**
Interactive X-Y plot of 2 variables
[Details...](#)
- ☐ **Scatter, Time-Averaged (Interactive)**
Time-averaged, interactive X-Y plot of 2 variables
[Details...](#)
- ☐ **Scatter, Area Averaged (Static)**
Scatter plot comparing area averaged time series for two variables
[Details...](#)
- ☐ **Map, Difference of Time Averaged**
Difference of two time averaged variable maps
[Details...](#)

Drop-down menu of visualization choices for data comparisons

Total Variable(s) included in Plot: 0

Visualization selection in G4: Time-Series Options

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Select Plot
Choose a plot type.

☒ **Maps: Time-Averaged** ☐ Comparisons: Select... ☐ **Time Series: Select...** ☐ Vertical: Select... ☐ Miscellaneous: Select...

Select Date Range (UTC)
Format: YYYY-MM-DD.
- - 00 hrs to - - 23 hrs
Valid Range: 1979-01-01 to 2014-11-28

Select Variables

▼ **Disciplines**

- ☐ Aerosols (118)
- ☐ Atmospheric Chemistry (12)
- ☐ Atmospheric Dynamics (62)
- ☐ Hydrology (16)
- ☐ Water and Energy Cycle (26)

▼ **Measurements**

- ☐ Aerosol Index (1)
- ☐ Air Pressure (4)
- ☐ Air Temperature (14)
- ☐ Albedo (5)
- ☐ Altitude (4)
- ☐ Angstrom Exponent (16)
- ☐ Atmospheric Moisture (20)
- ☐ CH4 (4)
- ☐ CO (4)
- ☐ Cloud Fraction (4)
- ☐ Cloud Properties (9)

Number of matching Variables:

Keyword:

Time Series Choices More...

- ☐ **Seasonal**
Seasonal (inter annual) time series
[Details...](#)
- ☐ **Hovmoller, Longitude-Averaged**
Longitude-averaged Hovmoller, plotted over the selected time and latitude ranges
[Details...](#)
- ☐ **Hovmoller, Latitude-Averaged**
Latitude-averaged Hovmoller, plotted over the selected time and longitude ranges
[Details...](#)
- ☐ **Difference of Area Averages**
Time series of area averages of differences between two variables at each spatial grid point
[Details...](#)
- ☒ **Area-Averaged**
Time series of area-averaged values
[Details...](#)

Drop-down menu of choices for time-series plots

Help Reset Feedback **Plot Data**

Visualization selection in G4: Visualization Option Confirmation

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Select Plot
Choose a plot type.

☐ Maps: Select... ☐ Comparisons: Select... ☒ **Time Series: Hovmoller, Latitude-Averaged** ☐ Vertical: Select... ☐ Miscellaneous: Select...

Select Date Range (UTC)
YYYY-MM-DD
- - 00 hrs to - - 23 hr
Valid Range: 1979-01-01 to 2014-11-28

Select Region (Bounding Box)
Format: West, South, East, North
-180, -90, 180, 90

After the visualization option selection has been made, the selected visualization is displayed in the highlighted yellow box, to confirm the choice of visualization made by the user.

**End
of
demonstration**